Architecture and Graphic Design

Elective Full Year
Grade(s)9-12
A Level
Prerequisite:
None

The design process necessary for the planning and graphic presentation of an efficient home will be emphasized by learning about the relationship between various rooms and spaces. Acting as if they were architects working for a client, and using computer aided design equipment, students will draw floor plans, three dimensional models, furniture plans and elevations of a house in an American architectural style of their choice. Relationships between these types and Roman architecture will be explored. Models will be constructed. Computer graphic processes such as digital photography and desk top publishing will be used to promote the house design in a professional manner. An understanding of the elements and principles of design will become clear to students as they practice these techniques throughout the course. Students who wish to explore the fields of graphics, architecture, and /or interior design should enroll in this class. Honors credit can be arranged through a written agreement with the instructor for additional independent work. This course fulfills the semester arts graduation requirement.

Automobile Systems

Elective Full Year
Grade(s)10-12
A Level
Prerequisite:
None

Students will solve problems and gain a fundamental understanding of the automobile by working on the common major systems, engine, lubrication, cooling, fuel, emission, exhaust, transmission, suspension, brake, steering, heating & air conditioning, electrical, and body. Students will have the opportunity to explore the relationship between computers and the integrated electronic systems of automobiles. In the class, the student will become familiar with many of the different positions that are available in the field of automotive technology, and will learn to provide automotive services. The educational and training opportunities available to the students after high school will be stressed. Students who wish to explore the field of automotive tech should enroll in this class. Successful completion of this course with a grade of B or better will qualify the student for college credit at New England Institute of Technology.

Consumer Auto

Elective Semester
Grade(s)9-12
A Level
Prerequisite:
None

This course is designed for the student who generally will not further his or her education in the auto industry, but who realizes the importance of auto knowledge. The student will be instructed in the everyday operation and maintenance of the car, and will learn what to look for when purchasing a vehicle. Excluding housing, the vast majority of people will spend more money on automobiles than anything else during their lifetime. It makes a great deal of sense to know as much as you can about them.

Designing in the 21st Century with CAD

Elective Full Year
Grade(s)9-12
Honors or A Level
Prerequisite:
None

This course replaces the Computer Aided Drafting for Engineering by enhancing the drafting course with hands-on opportunities for students to build and construct from their designs. This course is a year-long implementation of the Museum of Science curriculum for Designing in the 21st Century and provides students with a comprehensive introduction to technology. Students will use the design process, including drafting, to design and build projects in the following units: design and manufacturing, thermal and fluid systems, electrical and communications, construction and integrated systems. Using Vector Works, in conjunction with a scanner, digital camera, laser printers and plotters, students will acquire a competent background in the drafting knowledge needed for college and technical programs. To obtain honors credit, the student must execute a written agreement with the instructor for additional work.

Exploring Technology

Elective Full Year
Grade(s) 9 -12
A Level
Prerequisite:
None

This is a full year course designed to offer the student an exploratory experience in general technology. Students rotate through twelve different modular workstations where they gain technological knowledge by performing hands-on activities in the fields of: construction, basic electricity, electronic communications, hydraulics, pneumatics, materials and processes, lasers, fiber optics, mechanisms, research and design, aerodynamics, and alternative energy. Students will also use the engineering design process to identify a design problem within constraints, evaluate ideas, build and test prototypes, and use CAD to draw plans with specifications.

Internal Combustion Engine

Elective Semester
Grade(s)9-12
A Level
Prerequisite:
None

In this course, students will work with the two and four-cycle internal combustion engine in order to gain an understanding of fuel systems, carburetion, ignition systems, engine lubrication, engine cooling, measuring engine performance, tune-ups, cylinder reconditioning, piston rings, rods, bearings, valves, and pollution control.

Robotics/Electronics

Elective Semester
Grade(s)9 - 12
A Level
Prerequisite:
None

Robots are devices that have the intelligence to interpret information, make decisions, and then effect their environment. Students in this class will explore the exciting relationship between computers and machines by using the engineering design process to build and program robots. The fundamentals of electrical circuits will be an integral part of the course. In the tradition of the First Robotics Competition, students will also work in teams to engineer and construct radio controlled vehicles that will compete with each other on a playing field. No previous background is required.

School Projects

Elective Semester
Grade(s)9-12
A Level
Prerequisite:
Teacher recommendation

Join us for a variety of creative experiences which are directly related to our school. Use your creativity and talent to improve school facilities and environment by participating in the building of the countless projects for Shrewsbury High School and the town. These projects will vary. Examples of some of the work that the class has done are: the making of the Bergstrom Field sign; the construction of small buildings or room renovations; the construction of trophy cases for the Athletic Department; the making of starting blocks for the swim team; the building of the signs in front of the Town Hall. If you have an idea for a special school or town project, come and create it in this class or help with another idea.

Transportation and Power

Elective Full Year
Grade(s)11-12
A Level
Prerequisite:
Auto Systems

In addition to working on the major automobile systems, students will be involved with activities that include the construction of : 1. various power and energy systems such as wind and solar, 2. various transportation systems such as electric and marine vehicles, 3. systems that deal with recycling and waste disposal. Students will have the opportunity to explore the relationship between computers and the integrated electronic systems of automobiles. In the class, the student will become familiar with many of the different positions that are available in the fields of automotive technology, transportation, and power and will learn to produce goods and provide services related to these fields. Students who wish to explore the field of automotive technology should enroll in this class. Successful completion of this course with a grade of B or better will qualify the student for college credit at New England Institute of Technology.